



## FIRST NATIONAL POINT PREVALENCE SURVEY OF HEALTHCARE-ASSOCIATED INFECTIONS AND ANTIMICROBIAL USE IN ACUTE CARE HOSPITALS IN THE REPUBLIC OF MOLDOVA

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**Introduction.** Healthcare-associated infections (HAIs) present a major public health problem with an impact on morbidity, mortality and quality of life. On average, up to 7% of patients in high-income countries and 10% in middle and low-income countries acquire at least one HAI. Deaths caused by HAIs account for about 10% of affected patients. At the national level data on the epidemiological situation and risk factors in HAIs are incomplete, against the background of underreporting, lack of active surveillance of HAIs, fragmented surveillance of antimicrobial resistance and antimicrobial use (AM) at the health facility level.

The objective of the study was to highlight the problem of HAIs and AM use in acute care hospitals, identification of risk factors and raising awareness of the problem among health-care workers and decision makers by using active epidemiological surveillance.

**Material and methods.** The methodology of the point prevalence survey of healthcare-associated infections and antimicrobial use in acute care hospitals (PPS) was patient-based, developed based on the European Centre for Disease Prevention and Control (ECDC) Protocol version 5.3/2016. The study was accomplished in 2018, on a sample of 67 hospitals, 546 wards and 10594 patients.

Data collection and validation were performed on paper at the health facility level, data analysis was accomplished using Helics.Win.Net software. The PPS study generated hospital, ward and patient indicators, including the prevalence of HAIs and AM use relative to risk factors.

**Results.** The prevalence of HAIs was 1.6%, with predominance of pneumonia (25%), surgical site infections (16.1%), lower respiratory tract infections (14.9%), urinary tract infections (11.3%). The highest prevalence of HAIs was recorded at the patients from intensive care units – 20.0%, the patients with invasive medical devices (intubated – 32.1%, central vascular catheter – 22.8%, urinary catheter – 15.2%), in patients with NHSN surgery (6.9%) and with severity of underlying illness (8.2%). In 72% HAIs were associated with the current admission, in patients with hospitalization period  $\geq 15$  days the prevalence of HAIs was 3.3% compared to 0.6% in those with a hospital stay of 1-3 days. The etiological confirmation of HAIs was reported only in 23,2% of cases, the causative agent being presented by *Klebsiella spp.* in 26%, *Enterococcus spp.* – 18%, *coagulase-negative Staphylococci* – 14% and *P. aeruginosa* – 12%. *Klebsiella spp.* showed increased resistance to 3rd generation cephalosporins – 84.6% and to carbapenems – 46.2%. The prevalence of AM use was 42.7%, with an average of 1.3 antimicrobials administered to one patient. The most frequently used antimicrobials were the 3rd generation cephalosporins – 34.5%, broad-spectrum penicillins – 12.9%, the 1st and 2nd generation of cephalosporins – respectively 10.6% and 8.2%. Antimicrobials were more frequently prescribed for treatment (73.8%) and for surgical prophylaxis for more than one day – in 93.5%.

**Conclusions.** Data on HAIs and AM use in hospitals, obtained for the first time by implementing active surveillance based on the ECDC tool, are standardized and comparable at national and international level and allow the assessment of the situation in hospitals, obtaining evidence for infection prevention and control and AM stewardship programmes at local level, and arguing national policies.